

Rapid Deployment of Deep AI Models in Engineering Solutions

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Artificial Intelligence revived in the last decade. The need for progress, the growing processing capacity and the low cost of the Cloud have facilitated the development of new, powerful algorithms. The efficiency of these algorithms in Big Data processing, Deep Learning and Convolutional Networks is transforming the way we work and is opening new horizons. Thanks to them, we can now analyse data and obtain unimaginable solutions to today's problems. Nevertheless, our success is not entirely based on algorithms, it also comes from our ability to follow our "gut" when choosing the best combination of algorithms for an intelligent artefact. It's about approaching engineering with a lot of knowledge and tact [1-87]. This involves the use of both connectionist and symbolic systems, and of having a full understanding of the algorithms used. Moreover, to address today's problems we must work with both historical and real-time data. We must fully comprehend the problem, its time evolution, as well as the relevance and implications of each piece of data, etc. It is also important to consider development time, costs and the ability to create systems that will interact with their environment, will connect with the objects that surround them and will manage the data they obtain in a reliable manner.

In this keynote, the evolution of intelligent computer systems will be examined. The need for human capital will be emphasised, as well as the need to follow one's "gut instinct" in problem-solving. We will look at the benefits of combining information and knowledge to solve complex problems and will examine how knowledge engineering facilitates the integration of different algorithms. Furthermore, we will analyse the importance of complementary technologies such as IoT and Blockchain in the development of intelligent systems. It will be shown how tools like "Deep Intelligence" make it possible to create computer systems efficiently and effectively. "Smart" infrastructures need to incorporate all added-value resources so they can offer useful services to the society, while reducing costs, ensuring reliability and improving the quality of life of the citizens [88-164]. The combination of AI with IoT and with blockchain offers a world of possibilities and opportunities.

The use of edge platforms or fog computing helps increase efficiency, reduce network latency, improve security and bring intelligence to the edge of the network; close to the sensors, users and to the medium used.

This keynote will present success stories regarding biotechnology, smart cities, industry 4.0, the economy, and others. All these fields require the development of interactive, reliable and secure systems which we are capable of building thanks to current advances. Several use cases of intelligent systems will be presented and it will be analysed how the different processes have been optimized by means of tools that facilitate decision-making [165-221].

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